

In response to the Office Action mailed January 6, 2003, please amend the above-identified application as follows:

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A method for recombinase mediated expression cassette exchange (RMCE) for substituting a positive-negative selectable marker by an incoming DNA in the genome of cells or parts of cells comprising the steps of
 - a) integrating into a chromosomal locus of the genome of said cells a first DNA expression cassette carrying a positive-negative selection marker flanked by a wild type FLP-recombinase recognition target (FRT) site on one end and a modified heterospecific FRT site on the other end,
 - b) selecting cell clones surviving the conditions for positive selection,
 - c) exchanging said first DNA expression cassette against an incoming second DNA expression cassette located on a circular vector and carrying a homologous or heterologous gene (transgene) of any coding sequence flanked by the same FRT sites as said first DNA expression cassette mediated by the action of FLP-recombinase, wherein said cells are vertebrate embryonic stem cells (ES) and said parts of cells are nuclei of vertebrate cells, which can be inserted into ES cells, and wherein
 - d) maintaining the conditions for positive selection during cultivation of said cells obtained in step b) until exchanging said first DNA expression cassette against said incoming second DNA expression cassette,
 - e) using in step c) an incoming second DNA expression cassette which is marker-free, and

f) selecting cell clones obtained after step c) surviving the conditions for negative selection.

2. (original) The method according to claim 1 wherein said positive-negative selection marker is a hygromycin-B-phosphotransferase and HSV-thymidine kinase encoding (hygtk) fusion gene.

3. (previously amended) The method according to claim 1 wherein said modified heterospecific FRT site is a FRT spacer mutant.

4. (original) The method according to claim 3 wherein said FRT spacer mutant is the F₃ mutant.

5. (previously cancelled)

6. (currently amended) The method according to claim 5 1, wherein said vertebrate embryonic stem cells are mouse embryonic stem cells.

7. (previously amended) Regenerative vertebrate cells comprising a modified genome obtainable by the method of claim 1.

8. (previously amended) Nuclei of vertebrate cells comprising a modified genome obtainable by the method of claim 1.

9. (original) Regenerative vertebrate cells containing a nucleus according to claim 8.

10. (currently amended) A method for generation of transgenic ~~vertebrates~~ ~~mice~~ comprising the step of injecting mouse ES cells comprising a modified genome obtained by the method of claim 1 into blastocysts of said ~~vertebrate~~ ~~mice~~.

11. cancelled.